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Letter to the Editor

Pivotal role of elevated heart rate in the cardiovascular continuum

We congratulate Custodis et al. for demonstrating that elevated heart rate (HR) plays a pivotal role in the vascular pathophysiology of the cardiovascular continuum [1]. An elevated HR promotes atherosclerosis via not only sympathetic overactivation, but also by modulating the local hemodynamic environment. An elevated HR increases the exposure of the endothelium to systolic low shear stress (SS), attenuates the diastolic SS, and increases local tensile stress, which change the arterial structure in patients with cardiovascular risks. Thereby, HR lowering might act specifically on atherosclerosis-prone lesions, contributing to a residual risk reduction [2]. The prognostic benefit of β blockers in patients with stable coronary artery disease has been called into question [3]. These findings might be due in part to inadequate HR control [4], indicating that the physician did not use a β blocker in a HR-guided manner, because no optimal HR level is described in the guideline documentation. The SIGNIFY study will reveal the prognostic significance of HR lowering for stable CAD patients [5].

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